

EXHIBIT A

FISSLER
ELEKTRONIK

QUOTATION

Your search phrase



Downloads

Product

Services



Sectors of
industry



News & Press

Company



Contact



Safety products

- > Press Brake Safety
- > Light barriers
- > System solutions
- > Switchgear and control units
- > Safety laser scanners
- > Safety contact mats
- > Safety footpedals
- > Safety Controller

Standard sensors

- > Light curtains
- > Hole detectors
- > Loop sensors
- > Infrared light barriers
- > Sentinel traffic light
- > Coding strips



Zur Erweiterung unserer Mannschaft suchen wir Elektroniker



Start	Product portfolio	Services	Sectors of industry	News	Company	Careers	Contact
> Request quotation	<ul style="list-style-type: none"> ▪ Safety products ▪ Press Brake Safety ▪ Light barriers ▪ System solutions ▪ Switchgear and control units ▪ Safety laser scanners ▪ Safety contact mats ▪ AMS, AMS/N ▪ FPSC-Profibus-DP ▪ Standardsensoren ▪ Light curtains ▪ Hole detectors ▪ Loop sensors ▪ Infrared light barriers ▪ Sentinel traffic light ▪ Coding strips 	<ul style="list-style-type: none"> ▪ Risk analysis ▪ Application advice ▪ Machine control ▪ Technical support ▪ Safety testing ▪ Plant modernization ▪ Spare parts supply ▪ Safety and product training courses ▪ EMC service ▪ Downloads ▪ SISTEMA 	<ul style="list-style-type: none"> ▪ Target groups ▪ Automotive ▪ Woodworking industry ▪ General and special-purpose machine engineering ▪ Presses / shears / sheet metal working ▪ Stone and construction industry ▪ Warehousing 	<ul style="list-style-type: none"> ▪ Trade fairs and diary dates 	<ul style="list-style-type: none"> ▪ Customer benefits ▪ Engineering ▪ Quality and environment ▪ History 	<ul style="list-style-type: none"> ▪ Situations vacant ▪ Training 	<ul style="list-style-type: none"> ▪ Representation

EXHIBIT B



Data sheets and Systema Library

Our General Catalogue and the data sheets for our products are available for downloading here.

Safety Products

Products	Documents						
ALL FIESSLER PRODUCTS	Product Catalog_ 20 MB!!			-	-	-	-
<u>AKAS-Press Brake Protection System</u>	Product video AKAS2	Video	Video	Video	Video	Video	Video
	Operating Instructions AKAS-3PM /-3PF					-	-
	Operating Instructions AKAS-3M /-3F /-IIM /-IIF /-LCM /-LCF					-	
	Operating Instructions AKAS-LC II M / -LC II F			-	-	-	-
	Product overview			-		-	-
	Technical Data of the Safety pedal			-	-	-	-
	Description of the AKAS mounting kit		-	-	-	-	-
	AKAS CAD drawings (dxf, pdf)						
	AKAS3 STEP drawings - transmitter/receiver/mounting kit/swiveling adaptor						
	AKAS_LC_II_M_F Drawings in the formats jpg, step, pdf						
<u>AMS - AKAS Muting System</u>	Appliance_description			-		-	-

<u>AMS2 - AKAS Muting System 2</u>	Operating Instructions			-	-	-	-
<u>AMS3 - AKAS Muting System 3</u>	Operating Instructions for Software V 1.4 (ask older version via email!)					-	-
<u>AMS3 / G - AKAS Muting System 3</u>	Operating Instructions for Software V 1.4 (ask older version via email!)	-		-	-	-	-
<u>BLCT - Safety light curtains with Blanking features_category 4</u>	Selection table Lightcurtain		-	-	-	-	-
	Appliance description			-		-	-
	Operating Instructions			-	-	-	-
	Housing design / CAD formats stp,igs,dxf,dwg						
<u>BLPG / BPSG - Blanking-programming unit</u>	Operating Instructions			-	-	-	-
<u>BLVT - Safety light curtains with Blanking features_category 4</u>	Selection table Lightcurtain		-	-	-	-	-
	Appliance description			-		-	-
	Operating Instructions			-	-	-	-
	Dimensional drawings of XLVT 100-1900 in stp,igs,dxf,dwg						
<u>Operating mode programming unit BPXC</u>	Appliance description		-	-	-	-	-
<u>EU2K - single safety beam</u>	Appliance description					-	-
	Operating Instructions			-	-	-	-
<u>EU2K 500/2</u>	Operating Instructions			-	-	-	-
<u>FGUL- retrofit -kit FGS / MSL to ULVT</u>	Appliance description					-	-
<u>Overview foot-pedals & Safety foot-pedals</u>	Overview foot-pedals & Safety foot-pedals			-	-	-	-
<u>Safety foot-switch, single pedal</u>							
<u>FE-FS1-SU1ASDU1-U</u>	Appliance description			-	-	-	-
<u>FE-FS1-SU1ASDO2-U</u>	Appliance description			-	-	-	-
<u>FE-FS1-SU1ASDO2V-U</u>	Appliance description			-	-	-	-
<u>FE-FS1-S2DO2V-U</u>	Appliance description			-	-	-	-
<u>Safety foot-switch, double pedal</u>							
<u>FE-FS2-SU1ASDU1/U1-U</u>	Appliance description			-	-	-	-
<u>FE-FS2-U1/SU1ASDU1-U</u>	Appliance description			-	-	-	-
<u>FE-FS2-S2ASDO2/U1-U</u>	Appliance description			-	-	-	-
<u>FE-FS2-SU1ASDO2/U1-U</u>	Appliance description			-	-	-	-

<u>FE-FS2-U1/SU1ASDO2S-U</u>	Appliance description			-	-	-	-
<u>FE-FS2-SU1ASDO2/SU1ASDO2-U</u>	Appliance description			-	-	-	-
<u>FE-FS2-SU1ASDU1/SU1ASDU1-U</u>	Appliance description			-	-	-	-
<u>FE-FS2-U1/SU1ASDO2-U</u>	Appliance description			-	-	-	-
<u>FE-FS2-U2/SU2ASDU1-U</u>	Appliance description			-	-	-	-
<u>Foot-switch, single pedal</u>							
<u>FE-FS1-U1-U-YE</u>	Appliance description			-	-	-	-
<u>FE-FS1-U1-U</u>	Appliance description			-	-	-	-
<u>FE-FS1-SU1P10K-U</u>	Appliance description			-	-	-	-
<u>Foot-switch, double pedal</u>							
<u>FE-FS2-U1/U1-U</u>	Appliance description			-	-	-	-
<u>FLSC</u> Safety Laser Scanner	Appliance description			-	-	-	-
<u>FMSC</u> - Safety Center	Info Manual			-		-	-
	Technical data			-		-	-
	Info Manual FMSC-R/2R (contact extension)			-	-	-	-
	Product video	<u>Video</u>	<u>Video</u>	-	<u>Video</u>	-	-
	EtherCat device description file						
	Profinet device description file						
FMSC Studio Demosoftware	FiesslerStudioInstall_3.12.3.31051.exe	<u>Download for</u>					
<u>FMSC-Safety switchgear</u>	Overview brochure of all switching devices			-	-	-	-
<u>FPSC</u> - Safety Center	Appliance description					-	-
<u>FPSC</u> Gateway	Operating Instructions			-	-	-	-
<u>FSEM</u> - Contact extension for	Appliance description					-	-
ILCT - Safety light curtains with Blanking features_category 2	Selection table Lightcurtain		-	-	-	-	-
	Appliance description			-		-	-
	Operating Instructions			-	-	-	-

	Housing design / CAD formats stp,igs,dxf,dwg							
ILVT - Safety light curtains with Blanking features_category 2	Appliance description			-		-	-	
	Operating Instructions			-	-	-	-	
	Selection table Lightcurtain		-	-	-	-	-	
	Operating Instructions		-	-	-	-	-	
	Dimensional drawings of XLVT 100- 1900 in stp,igs,dxf,dwg							
JHL 2 - Laser Adjustment	Data sheet					-	-	
LSUW - Infrared accident prevention safety curtains	Operating Instructions			-		-		

Products	Documents								
LSUW 24V	Operating Instructions			-	-	-	-	-	
LSRA - Snap-On Relay Output Module for ULVT/BLVT	Appliance_description					-	-	-	
Muting	Description of the Mutingfunktion		-	-	-	-	-	-	
PLSG - Safety Controller for muting functions	Operating Instructions			-		-	-	-	
	Appliance_description					-	-	-	
PLSG K - Safety Controller for muting functions	Appliance_description					-	-	-	
	Operating Instructions			-	-	-	-	-	
Safety.Switching box.....K:	Appliance_description: ULSG/ULSG_DUO/ULSG3_6					-	-	-	
	Operating Instructions: LSUW NSR3-1 K, LSUW N1 Muting K, LSUW N1 K, LSUW N1 DUO K, BLPG, BPSG,			-	-	-	-	-	
STM STK - Safety contact mats	Operating Instructions- safety mats / safety controller								
	Form for safety mat offer		-	-	-	-	-	-	
Self Supporting Column and Shock Protector for XLVT/ULVT	Appliance_description			-	-	-	-	-	
	Housing design / formats stp,pdf								
Safety ligh tcurtains	ULVT, ULVT500/2, TLVT, BLVT, ILVT			-	-	-	-	-	
TLCT - Safety light	Operating Instructions			-	-	-	-	-	

curtains_category 2									
TLVT - Safety light curtains_category 2	Operating Instructions			-	-	-	-	-	
ULCT - Safety light curtains_category 4	Selection table Lightcurtain		-	-	-	-	-	-	
	Appliance_description			-		-	-	-	
	Operating Instructions			-	-	-	-	-	
	Housing design / CAD formats stp,igs,dxf,dwg								
ULSG - Safety switch box for (X)LVT and (X)LCT light barriers	Appliance_description					-	-	-	
	Operating Instructions			-	-	-	-	-	
ULVT - Safety light curtains_category 4	Selection table Lightcurtain		-	-	-	-	-	-	
	Operating Instructions			-	-	-	-	-	
	Appliance_description					-	-	-	
	Dimensional drawings of XLVT 100-1900 in stp,igs,dxf,dwg								
ULVT 500/2 R	Appliance_description			-		-	-	-	

Non Safety Products

Products	Documents								
CCD - Loop sensor	Appliance_description					-	-	-	-
GLSL - Hole Detector	Appliance_description					-	-	-	-
	Description of the mounting straps from GLSL		-	-	-	-	-	-	-
GR - Reflex light barrier	Appliance_description				-	-	-	-	-
GSDII - Loop sensor for band shaped material	Appliance_description					-	-	-	-
Coding stripes	Appliance_description					-	-	-	-
MFL - multi-features light barrier	Appliance_description					-	-	-	-
MLVT/MLPB - Mesuring light curtain	Operating Instructions			-	-	-	-	-	-
	Appliance_description					-	-	-	-
	GSD-Datei								
	Info Manual			-	-	-	-	-	-
	operating instructions			-				-	-

Sentinel traffic light- RAZL-2CO	Setup_Guide			-				-	-
	Product video	<u>Video</u>	<u>Video</u>	-	-	-	-	-	-
	CAD data of the RAZL 2CO columns (step, jpg, pdf)								
	Current device software. Prerequisite for this update is the device software (server version) V2.2.55	Update_V2.3.40							
	Obsolete version, required if the device software (server version) is older than V2.2.55	Update_V2.2.55							
	Veraltete Version, wird benötigt wenn bei einem Update die Gerätesoftware (Server Version) älter als V2.0.2161 ist	Update_V1_2.0.2161							
RAZL - Counting light barrier	Operating Instructions					-	-	-	-
SLVT - Area Sensor for controlling and counting	Appliance_description					-	-	-	-

Other one...

Products	Documents										
ISO 9001	ISO 9001 certificate of the company Fiessler Elektronik			-	-	-	-	-	-	-	-
Service	Prospekt / Übersicht		-	-	-	-	-	-	-	-	-
ALB	General Terms of Delivery			-	-	-	-	-	-	-	-
SISTEMA LIBRARY	Fiessler Sistema Library	<u>SISTEMA LIBRARY</u>									

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EXHIBIT C



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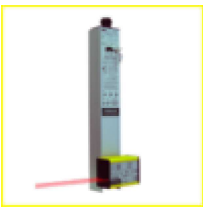
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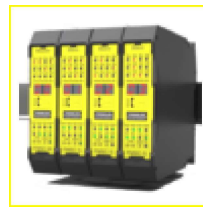
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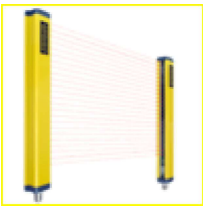
[Start](#) > [Product](#)



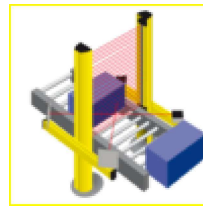
**Safe press
guarding**



Safety Controller



**Safety light
barriers**



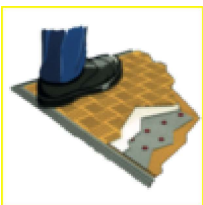
**Safe system
solutions**



**Switchgear and
control units**



**Safety laser
scanner**



**Safety contact
mats**



Safety Footpedals



**Overview of
standard sensors**

Start	Product portfolio	Services	Sectors of industry	News	Company	Careers	Contact
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EXHIBIT D



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Start > Services

Everything – straight from the specialists

A reliable, effective solution for operational safety always starts with a detailed analysis and consultation process, and continues well beyond commissioning of the safety system. Safety tests in compliance with applicable standards, training courses, modernization projects, spare parts supplies.... Fiessler offers you the entire package – meticulously thought through and tailored to your specific needs.



Risk analysis

Application advice

Machine control

Technical support

Safety testing

Plant
modernization

Spare parts
supply

Safety and
product training
courses

EMC service

Downloads

SISTEMA

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- History



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Start > Services > Risk analysis

Risk analysis

To determine precisely where safety risks for machine operators occur, the experts at Fieessler will support you in drawing up a risk analysis. We will be pleased to take a look at the machine in question during an on-site visit, or alternatively send us clear and meaningful photo material. We also require a precise description of how the machine is intended to be used. We are the right port of call when it comes to any legal questions, based on our sound knowledge of statutory standards and safety regulations both national and international.



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Start > Services > Technical support

Technical support

We can be quickly and simply reached by phone or email. In case of emergencies, we also offer effective remote maintenance, can analyse your circuit diagrams where necessary and make suggestions for effective integration and connections.



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Start > Services > **Safety testing**

Safety testing

There is no "once and for all" in the world of safety technology. Repeated safety inspections in conformity with applicable standards are obligatory. To comply with the operator directive, plants have to be precisely monitored, not only before first commissioning but also by repeat inspections at defined intervals. Our experienced service staff will take a precise look at the current work situation on our customers' premises to check, for instance, whether the right distances are being adhered to, whether the light barrier is still correctly integrated – and much more besides. These inspections are offered to customers within the framework of a maintenance contract. Which, incidentally, is valid the world over: in non-German speaking countries we cooperate with a network of competent certified experts trained by us.



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Start > Services > **Plant modernization**

Plant modernization

As the world market leader in the field of press brake safety, Fiessler Elektronik is also a consummate specialist in the modernization of older press brakes. Using the system's circuit and hydraulic diagrams, we are able to analyse exactly what needs to be replaced or added. We offer the relevant components and also take charge of installation – to create a meticulously engineered ready-to-use solution.



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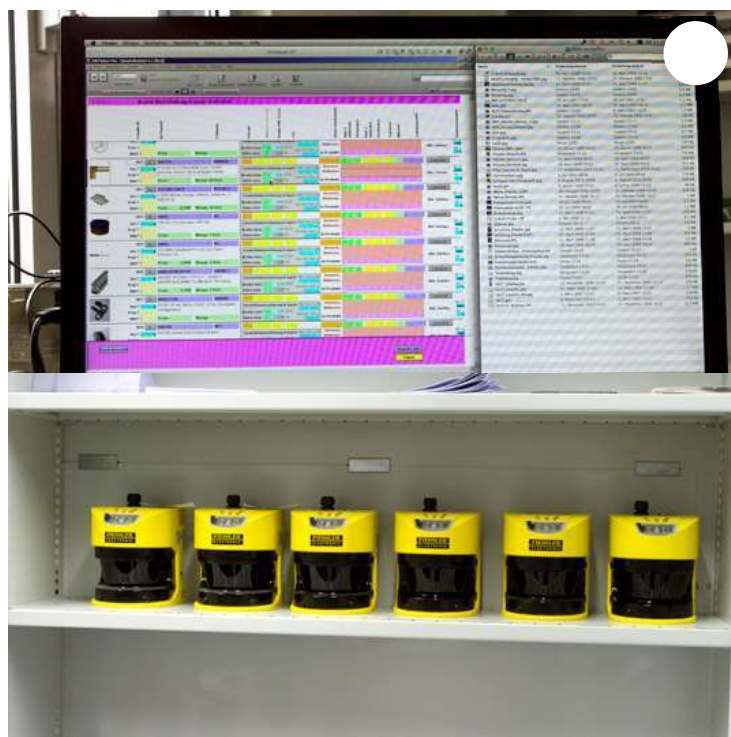
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Spare parts supply

We want to make the everyday world of work not only safer but also easier for our customers. A key aspect when it comes to providing greater convenience is compatibility: At Fiessler, we attach major importance to ensuring that new models are downward compatible with older systems. What this means in practice: If older equipment has to be replaced, it can be seamlessly integrated into the new system. And if a repair or the provision of spare parts will eliminate the need to buy new equipment, then here too you may rely on us to provide the solid expertise you need. We supply spare parts the world over – even flown in by express delivery – and we maintain a stock of spares over many years. We even repair light barriers which have been doing stalwart service for 20 years – with our quality track record, this length of service is by no means an exception.



Fiessler Elektronik GmbH & Co. KG, Buchenteich 14, D-73773 Aichwald, Phone: +49 (0) 711/91 96 97-0, Fax: +49 (0) 711/91 96 97-50, info@fiessler.de

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- Switchgear and control units
- Safety laser scanners
- Safety contact mats
- AMS, AMS/N
- FPSC-Profibus-DP
- Standardsensors
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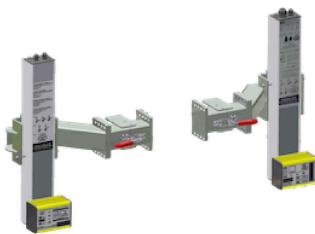


Safety and product training courses

While premium Fiessler safety solutions offer outstanding user convenience, safety and product training still makes a lot of sense. We are pleased to hold training courses either in our company or on the customer's premises. Alongside a detailed explanation of our safety systems, we demonstrate the correct way to install and work with them.



Overview 2023 - Training course / seminars



AKAS - Integrator training

Expiration:

1. Greetings and conception of the company **Fiessler Elektronik**
2. System configuration
3. **Operational principle**
4. Integration in press control and start-up

Duration: 2 daily training (for max 10 persons)

Partner: Office:+49-711 919697-11 oder per Email:info@fiessler.de

Dates: As required !



Seminar: Application technology of safety light curtains

Expiration:

- 1.Greetings and conception of the company Fiessler Elektronik
- 2.Application technology of safety light curtains
- 3.The European machine guideline
- 4.Description of function of safety light barrier systems
- 5.Assembly and adjustment
- 6.Standards
- 7.Examinations of safety light curtains

Duration: 1 daily training

Partner: Office:+49-711 919697-11 oder per Email:info@fiessler.de

Dates: 23.03.2023 -- 22.06.2023 -- 05.10.2023 -- 07.12.2023



FMSC- Integrator training

Expiration:	1.Greetings and conception of the company Fiessler Elektronik 2.System configuration 3. Operational principle 4.Integration in press control and start-up
Duration:	2 daily training (for at least 4 to max. 10 persons, in german language) --> training courses in English on request!
Partner:	Büro:+49-711 919697-11 oder per Email:info@fiessler.de / Bestelltext: FPSC-Trainin
Dates:	As required !

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> Request quotation	<ul style="list-style-type: none"> ▪ Safetyproducts ▪ Press Brake Safety ▪ Light barriers ▪ System solutions ▪ Switchgear and control units ▪ Safety laser scanners ▪ Safety contact mats ▪ AMS, AMS/N ▪ FPSC-Profibus-DP ▪ Standardsensoren ▪ Light curtains ▪ Hole detectors ▪ Loop sensors ▪ Infrared light barriers ▪ Sentinel traffic light ▪ Coding strips 	<ul style="list-style-type: none"> ▪ Risk analysis ▪ Application advice ▪ Machine control ▪ Technical support ▪ Safety testing ▪ Plant modernization ▪ Spare parts supply ▪ Safety and product training courses ▪ EMC service ▪ Downloads ▪ SISTEMA 	<ul style="list-style-type: none"> ▪ Target groups ▪ Automotive ▪ Woodworking industry ▪ General and special-purpose machine engineering ▪ Presses / shears / sheet metal working ▪ Stone and construction industry ▪ Warehousing 	<ul style="list-style-type: none"> ▪ Trade fairs and diary dates 	<ul style="list-style-type: none"> ▪ Customer benefits ▪ Engineering ▪ Quality and environment ▪ History 	<ul style="list-style-type: none"> ▪ Situations vacant ▪ Training 	<ul style="list-style-type: none"> ▪ Representation



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Software assistant SISTEMA

Safety Integrity Software Tool for the Evaluation of Machine Applications A Tool for the Easy Application of the Control Standard EN ISO 13849-1

Everything you need to know about the Windows tool SISTEMA can be found here: Simply click on the two following links. The third link offers you the opportunity to download our Fieessler SISTEMA library to assist in driving forward your projects with most efficiency. Should you have any questions, please do not hesitate to contact the Fieessler experts by phone.



Safety Integrity Software Tool for the Evaluation of Machine Applications A Tool for the Easy Application of the Control Standard EN ISO 13849-1

The SISTEMA software utility provides developers and testers of safety-related machine controls with comprehensive support in the evaluation of safety in the context of ISO 13849-1.

SISTEMA

BGIA Report , "Functional safety of machine controls – Application of EN ISO 13849"





Fiessler Elektronik - SISTEMA Library

Disclaimer:

The data in the Fiessler - Sistema-
Library were prepared to the best of
our knowledge and belief.

However, we assume no liability for
any errors and / or misconceptions
– unless they are subject to
converse and mandatory statutory
rules. The user of these data is not
released from its own responsibility
to check and assess our information
and recommendations for its own
use.

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The ultimate solution

Wherever man and machine work together, wherever industrial production takes place, safety measures are a must. Not just any measures, but industry and task-specific solutions. With almost 60 years of experience in the field of safety and optosensor technology, we at Fiessler Elektronik produce effective customized safety solutions – guaranteeing maximum safety plus maximum productivity.



Target groups

Automotive

Woodworking industry

General and special-
purpose machine
engineering

Presses / shears / sheet
metal working

Stone and construction
industry

Warehousing

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- | | | | | | |
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| ▪ Safety contact mats | ▪ Spare parts supply | | | | |
| ▪ AMS, AMS/N | ▪ Safety and product training | ▪ Stone and construction industry | | | |
| ▪ FPSC-Profibus-DP | ▪ Safety courses | ▪ Warehousing | | | |
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EXHIBIT F

> Trade fairs and diary dates

Fiessler Elektronik News

New hydraulic concept

Innovations and new concepts for drive systems in the field of press brakes also require new safety concepts and thus adaptations compared to conventional concept.

This is also the case with the ePrAX® system from HAWE (formerly Hoerbiger)

Together with the well-known press brake manufacturer Accurpress America, Inc. Fiessler Elektronik/Germany developed a safety concept for this new drive system.

This concept was implemented and tested for the compact safety controller **FPSC** as well as for the new modular safety controller **FMSC**.

New safety concept

Especially the new FMSC supports the adaptation to given drive concepts due to its free programmability and fast cycle times.

Together with the know-how of Fiessler Elektronik and the respective machine manufacturer, efficient and technically high-quality solutions for press brakes can be developed.

In combination with the new EtherCAT module the mentioned manufacturer was also able to significantly improve the diagnostic and message information. This results in reduced downtimes, more efficient operation of the machine and a reduction in the workload of the after-sales support.

Thanks to the open system concept of the FMSC safety PLC, further requirements can be implemented easily, flexibly and quickly.



Safety SPS FMSC



FMx S EtherCAT Modul

Access control RAZL-2CO- person counting in public areas in compliance with the DSGVO

The **RAZL-2CO** directional pedestrian counter from Fiessler Elektronik is used to monitor and control pedestrian access in public areas such as sales areas, studios, libraries, swimming pools, festivals, concerts, public toilets.

In this context the guard traffic light **RAZL-2CO** is used as access control or access control to limit the number of persons in an area.

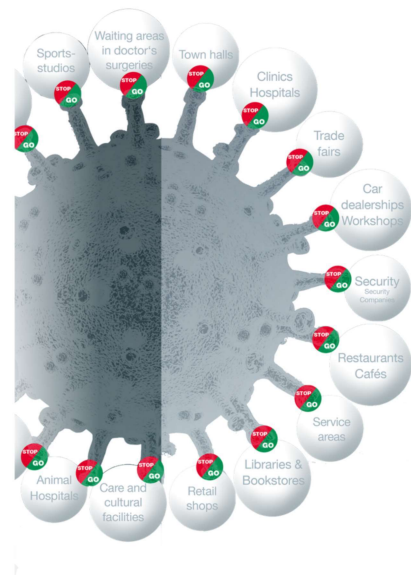
In the current COVID 19 pandemic situation, this access control traffic light prevents that the maximum acceptable number of persons in an area is not exceeded, and thus the necessary safety distance between the persons in this area cannot be maintained. The movement of persons is measured in compliance with the DSGVO. No data is collected or stored with this customer traffic light.

Due to a simple floor mounting with two columns opposite each other and only one connection of the master column to a conventional 230 V socket, the installation of this person counting control is easy and can be carried out without the need for qualified personnel. The configuration of this people counting system is simply done via the app supplied with the device using a smartphone or laptop. Among other things, the maximum permitted number of persons can be entered. If this maximum number is exceeded and/or the number of persons is limited, the access control light switches to red. If the area is entered while the display is red, the acoustic integrated alarm of the access light is triggered and indicates for everyone the violation of the customer number limit.

When leaving the area to be monitored, the respective person is subtracted. Thus, the app always shows the current number of persons in the monitored area and enables an easy to use customer number monitoring.

Through the WLAN connection, further control tasks can be easily solved directly, such as the control of automatic doors or the display of the current number of persons on a monitor in the entrance area.

The watchman traffic light [RAZL-2CO](#) can not only be used as access control during the current pandemic, but also for customer counting. In order to control and monitor marketing activities, for example, this device can be used to carry out a customer count or customer number control.



FMSC - Safety control system

The new product video of the Fiessler [FMSC safety controller](#) is online. Experience the advantages of a modern modular Safety control - Made in Germany



[Watch video online.....](#)

Neues Sicherheitskonzept für Palettierer

Dass Zement alles andere als eine graue Materie ist beweist die Rohrdorfer Gruppe seit Jahrzehnten mit einem breiten Leistungsspektrum.

Der nachhaltige Einsatz von Ressourcen geben den Kunden des Südbayerischen Portland-Zementwerks Geb. Wiesböck & Co., auch bekannt unter dem Namen Rohrdorfer Zementwerk, mit Sitz im Oberbayerischen Rohrdorf, die Gewissheit, stets die richtigen Produkte und den richtigen Partner gewählt zu haben.

Um die Wahl des richtigen Partners ging es auch bei einer bestehenden Anlage, die nicht einfach nur ersetzt, sondern nach neuesten Vorgaben und Normen sicherheitstechnisch auf den Stand der Technik gebracht werden sollte..... [weiterlesen!](#)



Das Sicherheitskonzept wurde mit folgenden Komponenten realisiert:

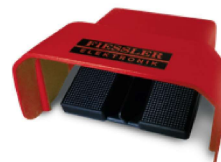
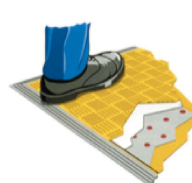
- Sicherheits-Lichtgitter [ULVT 800/3](#) in Schutzsäulen
- Sicherheitssteuerung [FMSC](#)
- Sicherheitsrelais [FSEM](#)

FMSC switching devices

We have recently added new safe switchgear units to our product range. These are complete in-house developments and of course like all our products Made in Germany. They are supplied complete with connection proposal.

FMSC-STM - Tapis de sécurité - Dispositif d'évaluation

(1) With the electronic switching device [FMSC-STM](#) safety contact mats and emergency stops can be retrofitted to an existing system without significantly changing the safety circuit. Furthermore a dead man's switch can be used for bridging. The device can be configured with or without restart interlock.



FMSC-FP - Safety foot pedal - Evaluation device

(2) With the **FMSC-FP** electronic switching device, a second foot pedal can be retrofitted easily and cost-efficiently without having to significantly modify the existing safety circuit. The emergency stop function can also be retrofitted using the device. It also provides diagnostic outputs for selector switch, foot switch and relay faults.

FMSC-ESM - Safe Standstill - Evaluation Unit

(3) With the electronic switching device **FMSC-ESM**, an axis can be safely monitored for standstill. Linear or incremental encoders can be used as sensors. Contactor monitoring and restart interlock can be easily configured, which makes the device very flexible to use. The device can be connected directly or via contactors to the frequency inverter. In addition, an emergency stop circuit can be connected to the device.

> **Info requests** <

BERUFLICHES SCHULZENTRUM AMBERG:

Mittlerweile ist es schon gute Tradition, dass Eberhard Weida und Alexander Berchtold am BSZAM über die Sicherheitstechnik der mittelständischen Firma „Fiessler Elektronik“ referieren. Die mittlerweile über 10-jährige Zusammenarbeit mit dem Familienunternehmen aus Esslingen in Baden-Württemberg stellt für beide Seiten eine "Win-win-Situation" dar.

Die Berufsschülerinnen und -schüler der beiden 12. Klassen der Mechatronik sowie die Schüler der Klasse FSMT1 der Staatl. Technikerschule hatten in den letzten Wochen einen Lernzirkel zum Thema Sicherheitstechnik bearbeitet. Bei den meisten Stationen des Lernzirkels kommen auch Sicherheitsgeräte wie **Sicherheitstrittmatte** mit Schaltgerät, **Sicherheitslichtvorhänge** mit Blanking- bzw. Mutingfunktion, **Sicherheitslaserscanner** oder eine **Sicherheitssteuerung** aus dem Hause Fiessler zum Einsatz. Deshalb konnten die beiden Referenten auf eine fachkundige Zuhörerschaft bei ihren kurzweiligen Vorträgen bauen.

Zu Beginn der Veranstaltung stellte Herr Berchtold das Traditionsunternehmen „Fiessler Elektronik“ vor. Das Familienunternehmen kann auf eine über 60-jährige Erfahrung im Bereich der optoelektronischen Geräte zurückblicken und hat sich zu einem weltweiten Technologieführer im Bereich der Sicherheitslichtschranken entwickelt. Nach einem Exkurs in die Maschinenrichtlinie 2006/42/EG erläuterte Herr Weida sehr lebensnah, was bei deren Umsetzung im beruflichen Alltag zu beachten ist. Das Hauptaugenmerk wurde aber nach der Vormittagspause auf die neue modulare **Sicherheitssteuerung FMSC** gelegt. Weil sich nach einer Livedemonstration der dazugehörigen Programmiersoftware kein Schüler traute, selbst Hand an Maus und Tastatur zu legen,



musste ein Lehrer ran. So zeigte Herr Pröbß, der die Veranstaltung mitinitiierte, noch einmal, wie intuitiv und einfach die Programmiersoftware „**FMSC Studio**“ mit Drag and Drop zu bedienen ist. Abschließend erläuterte Herr Berchtold anhand von interessanten Referenzbildern, was beim Einsatz von Sicherheitstechnik noch zu beachten ist.

Fazit am Ende der Veranstaltung: Die für alle Seiten gewinnbringende Zusammenarbeit muss auf jeden Fall weitergeführt werden.

[Link zum Artikel.....](#)

[Link zum Downloadformular für die FMSC Studio Demosoftware](#)

1. Programmable safety controller FMSC

Fiessler Elektronik has consequently implemented its more than 60 years of experience and know-how with the new and configurable modular FMSC safety controller. The development not only focused on the high standard of safety but also on how to simply and rapidly implement projects. Miscellaneous functionalities, such as creating combinations, make it easier for the user to program the safety controller. Already created projects can also be comprehensively documented. Rapid response times as well as the safety-oriented monitoring of up to 17 axes round off the profile of the new FMSC safety control.

The modular structure of the FMSC system family ensures that the most efficient hardware solutions will always be found for a monitoring task. The variations Eco, Basic, Advanced and Professional provide a selection of different master devices with a respectively different range of functions. The corresponding functionalities are simply integrated or configured with the programming software, FMSC Studio. The system can be expanded at any time with up to 16 expansion modules. As a result, up to 204 digital inputs and up to 153 digital outputs are available today. And up to 17 axes can be monitored for safety. The compact design makes it easy to integrate the safety control in new systems as well as for retrofitted systems.

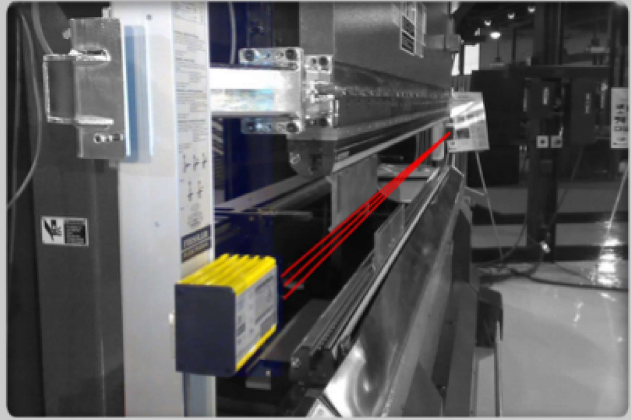


[> Info requests <](#)

2. Safe operation of a press brake during bending of reflecting or oil-covered material

The sheet metal which is used on press brakes is very frequently made of stainless steel or V2A steel. However, the sheet metal is covered as a means of protection from corrosion and oxidizing by a thin oil film. In both situations, the sheet metal is characterized by highly reflective and shiny surfaces. In order to provide a safe bending operation of these special materials, the

European Standard EN 12622 (Safety of machine tools) requires the use of laser light as light source for a following press brake safety system. Physically, laser light is the only light source emitting parallel lightbeams. Unlike other light emitting sources, the parallel laser light beams prevent the avoidance and non-detection of an obstacle caused by the reflecting objects, such as fingers or hands of the operating personnel. This press brake safety system is fully complying with the requirements of the EN 12622 (Safety of machine tools - Hydraulic press brakes), the new B11.3 (USA), CSA Z.142 (Canada), NR 12 (Brazil) and Japan. The Fiessler press brake safety system AKAS®3 and its laser light beams provide a reliable protection even during bending of reflecting or oil covered materials. The presence of the 3-dimensional laser protective field which is located beneath the upper tool prevents the operator's fingers or hands from being squeezed even under such unfavorable and, at the same time practice- oriented conditions. Thanks to the sequential reduction of the protective field during the closing movement of the press brake, a reliable protection is given during fast speed as well as during slow speed without any loss of productivity. With the help of the fully automatic electromotor driven supports, a safe, simple and operator-friendly adjustment is provided.



[> Info requests <](#)

3. Press Brakes safety System for compact press brakes

The Fiessler programmable safety center FPSC is an electronic safety controller for personal and machine protection and complies with the highest safety standards: up to safety class 4 according to EN 954-1, SIL 3 according to IEC 61508 SIL3 as well as PL e according to EN 13849. By the use of a safety bus which is available as option, a modular structured system which offers flexibility can be realized, therefore reducing the costly and often elaborate configuration of the safety bus. The simple programming of the FPSC is made via software. No specialized programmer know-how is required. For the connection, i.e. the integration of safe controlling components, various tested and certified software modules are available. The FPSC basic configuration consists of 36 safe inputs and 16 safe outputs. A serial interface transmits the diagnosis data to a superior control unit. More remarkable features of the FPSC are a minimum response time of 1 ms and a high cost/effectiveness.



[> Info requests <](#)

4. Safety solutions for tandem press brakes

Fiessler Elektronik has developed a new special safety system especially for tandem presses. This safety solution enables the

operator to safely bend small parts during single operation as well as large or long parts in tandem operation.

> [Info requests](#) <



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Start	Product portfolio	Services	Sectors of industry	News	Company	Careers	Contact
> Request quotation	<ul style="list-style-type: none">▪ Safety products▪ Press Brake▪ Safety▪ Light barriers▪ System solutions▪ Switchgear and control units▪ Safety laser scanners▪ Safety contact mats▪ AMS, AMS/N▪ FPSC-Profibus-DP▪ Standardsensoren▪ Light curtains▪ Hole detectors▪ Loop sensors▪ Infrared light barriers▪ Sentinel traffic light▪ Coding strips	<ul style="list-style-type: none">▪ Risk analysis▪ Application advice▪ Machine control▪ Technical support▪ Safety testing▪ Plant modernization▪ Spare parts supply▪ Safety and product training▪ Courses▪ EMC service▪ Downloads▪ SISTEMA	<ul style="list-style-type: none">▪ Target groups▪ Automotive▪ Woodworking industry▪ General and special-purpose machine engineering▪ Presses / shears / sheet metal working▪ Stone and construction industry▪ Warehousing	<ul style="list-style-type: none">▪ Trade fairs and diary dates	<ul style="list-style-type: none">▪ Customer benefits▪ Engineering▪ Quality and environment▪ History	<ul style="list-style-type: none">▪ Situations vacant▪ Training	<ul style="list-style-type: none">▪ Representation

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Out of the shadows, into the light

Faster speeds, more productivity, ever increasing precision: modern industrial machinery is beating all records when it comes to efficiency. However impressive this performance may be, it does bring with it a considerable risk to machine operators – which can cast something of a shadow. At Fiessler Elektronik, we have the antidote: Light. As an international technology leader in the field of light barriers and one of the world's premier suppliers of press brake safety systems, we design and produce individual personal protection systems.

Our company history, stretching back over almost 60 years, is testimony to our extensive experience and our solid responsible attitude to what we do. Our impressive collection of patents and ground-breaking safety solutions says everything about our innovative drive and our role as a pacemaker to the industry. Over 20 Fiessler representations spread over all five continents speak volumes about the lively demand for our products and services. How indispensable are our optosensor systems? Just ask any one of the many discerning customers who benefit from maximum safety coupled with maximum productivity – thanks to Fiessler technology.

- > Customer benefits
- > Engineering
- > Quality and environment
- > History



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One factor you can depend on

Neither too small nor too large: FieSSLer Elektronik has the size it needs to assert itself as a global player, but still retain the flexibility to respond to the individual needs of every customer. A precise risk analysis – either on site or using a machine photo – is usually the starting point. On the basis of our in-depth application advice based on individual customer needs, we go on to design and produce a specifically tailored, technically independent system solution which requires no additional switchgear. Our impressive vertical depth of production and the ideal size of our company mean that we can respond rapidly to customer enquiries.

The comprehensive FieSSLer product portfolio also includes high-grade safety components, safety software programmed to fit the bill by our specialists, professional commissioning, safety tests in compliance with all the relevant standards and a 24-hour hotline allowing customers to reach us from around the world.



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Start

Product portfolio

Services

Sectors of
industry

News

Company

Careers

Contact

> Request
quotation

- Safety products
- Press Brake Safety
- Light barriers
- System solutions
- Switchgear and control units
- Risk analysis
- Application advice
- Machine control
- Technical support
- Safety testing

- Target groups
- Automotive
- Woodworking industry
- General and special-purpose

- Trade fairs and diary dates

- Customer benefits
- Engineering
- Quality and environment
- History

- Situations vacant
- Training

- Representation

- Safety laser scanners
- Safety contact mats
- AMS, AMS/N
- FPSC-Profibus-DP
- Standardsensoren
- Light curtains
- Hole detectors
- Loop sensors
- Infrared light barriers
- Sentinel traffic light
- Coding strips
- Plant modernization
- Spare parts supply
- Safety and product training courses
- EMC service
- Downloads
- SISTEMA
- machine engineering
- Presses / shears / sheet metal working
- Stone and construction industry
- Warehousing

EXHIBIT H



Your direct line to us

> Representations

Reference:*

Enter Reference

Your message:*

Enter your message

Titel:

Enter title

First name:

Enter first name

Surname:*

Enter surname

Company:

Enter Company

Street / House number:

Enter street / house number

Call numbers at Fiessler

Call number: +49 (711) 91 96 97 + extension

Area	Direct dial
Switchboard	-0
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Enter postcode and city	Technical advice MLVT (measuring light curtains)	-27
Country:	Technical advice PLSG (light barriers)	-41
Enter country	Technical advice RAZL (counting light barriers)	-28
Your telephone number:	Technical advice STM (safety contact mats)	-28
Enter your telephone number	Technical advice SLVT (controlling light curtains)	-27
Your fax number:	Technical advice ULCT (light barriers)	-27
Enter your fax number	Technical advice ULVT (light barriers)	-27
Your e-mail address:*		
Enter your e-mail address		

I hereby give consent for my personal data to be recorded, processed and used by Fiessler Elektronik in strict compliance with our Privacy Policy. I am free to cancel this authorisation at any time.*

☐ Yes, I agree

Submit

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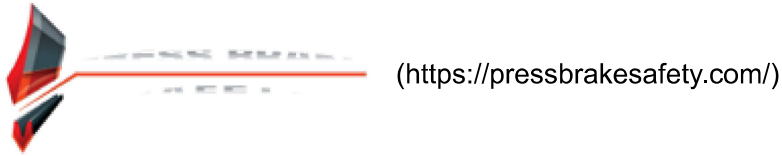
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Start	Product portfolio	Services	Sectors of industry	News	Company	Careers	Contact
> Request quotation	<ul style="list-style-type: none"> Safetyproducts Press Brake Safety Light barriers System solutions Switchgear and control units Safety laser scanners Safety contact mats AMS, AMS/N FPSC-Profibus-DP Standardsensoren Light curtains Hole detectors Loop sensors 	<ul style="list-style-type: none"> Risk analysis Application advice Machine control Technical support Safety testing Plant modernization Spare parts supply Safety and product training EMC service Downloads 	<ul style="list-style-type: none"> Target groups Automotive Woodworking industry General and special-purpose machine engineering Presses / shears / sheet metal working Stone and construction industry Warehousing 	<ul style="list-style-type: none"> Trade fairs and diary dates 	<ul style="list-style-type: none"> Customer benefits Engineering Quality and environment History 	<ul style="list-style-type: none"> Situations vacant Training 	<ul style="list-style-type: none"> Representation

- Infrared light barriers
- Sentinel traffic light
- Coding strips
- SISTEMA

EXHIBIT I

(800) 901-1193 ✉ sales@pressbrakesafety.com ([emailto:sales@pressbrakesafety.com](mailto:sales@pressbrakesafety.com))
📍 1938 South 925 East, Zionsville, IN 46077



About Us

[Home \(https://pressbrakesafety.com/\)](https://pressbrakesafety.com/) ➤ [About Us](#)

Certified Company ISO 9001-2008

About Press Brake Safety

Press Brake Safety, headquartered in Zionsville, Indiana has supplied metalworking machinery throughout the U.S. and Canada for 19 years and is a leading industry advocate for press brake operator safety. Press Brake Safety is the exclusive North American installer of Germany-based Fiessler AKAS® laser safety systems, the most sophisticated press brake safety systems in the world, and provides complete maintenance, service and training to users.

As the industry tries to balance profitability, operator safety and regulators' capabilities to effectively audit operators' practices, Press Brake Safety can help you protect your workers and your bottom line.

Press Brake Safety

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EXHIBIT J

FISSLER
ELEKTRONIK

AKAS®

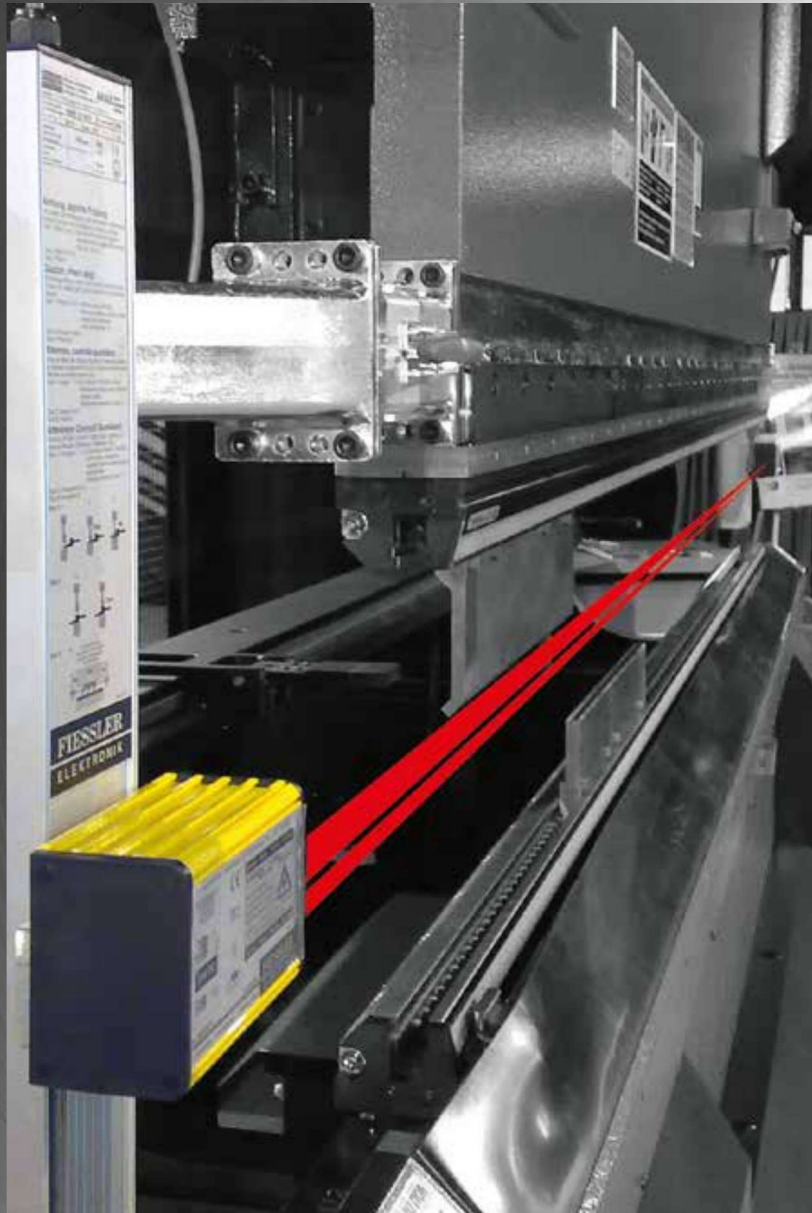
Press brake
safety system

Laser actuated AOPD
in compliance with
EN 12622

OEM and Retrofit

Installed safety
intelligence

Compatible with
all control units



WEBSITE

AKAS®



Company
description

Nearly 30 years later in 1996, Fiessler Elektronik was the first manufacturer worldwide to introduce the groundbreaking innovation of a specially following safety solution for pressbrakes (AKAS®).

In 2005, Fiessler Elektronik

monitoring and prototype tests in accordance with worldwide standards are a matter of course for Fiessler Elektronik.



Branches

AKAS®

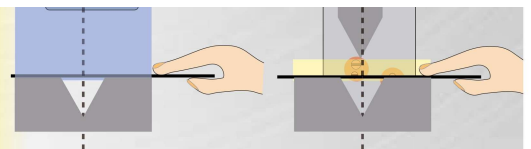
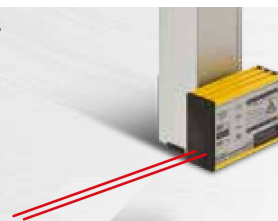


Training

shuts down the closing movement of the press).



Description
of AKAS



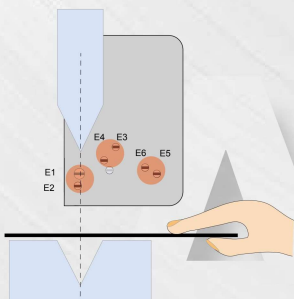
Fast speed up to 10 mm

Press in
fast speed
Press in
slow speed

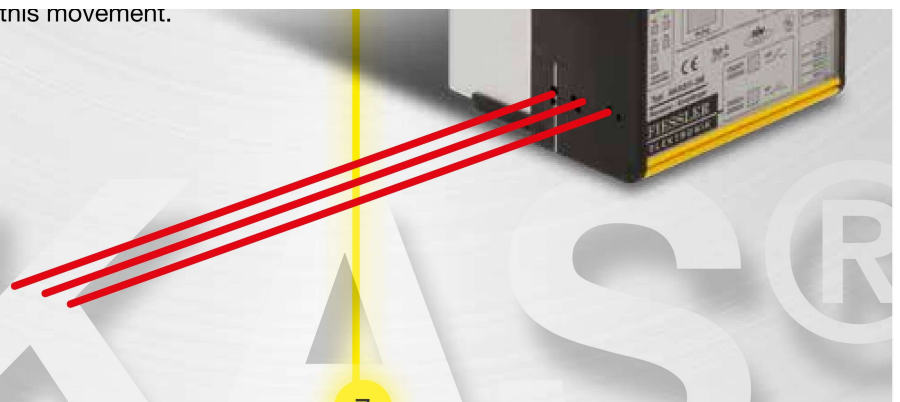







AKAS
Film

This operating mode enables the bending of wavy material or even edge bending within a closed box.



The receiver follows this movement.



	adjustment
	remove magnetic plate from transmitter
	go to control cabinet
	operate control cabinet
	remove magnetic plate

the blanking press with optimum safety.

This fully automatic adjustment process also definitively prevents the operator from making an incorrect adjustment.

Various holder systems are available for the mechanical mounting of the AKAS® transmitter support and the AKAS® receiver support.

- mounting holder for positioning the AKAS® LC without support.
- manual height movement for different tool sizes.
- marking stops for simple reproduction of already used tools.
- clamping protection while driving up through friction brake.



AKAS
holders





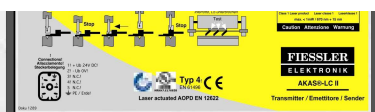
LC holder



**with manual
adjustment**

Version	M (Safety PLC required)	F (integrated safety control in the AKAS® receiver)	/8 (increased range)
AKAS® LC II	M	F	/8
AKAS® LC II V ¹⁾	M	F	vertical (p. 18)

1) AKAS® LC V - Protection of compact pressbrakes - see p. 18.



Max. length of upper tool 6 m	✓	✓	✓	✓	✓
Max. length of upper tool > 6 m	✓ ²	✓ ²		✓	✓
Max. range up to 30 m				✓	✓

1 version design

2 in version /8

3 PSDI presence sensing device initiation

4 not necessary as related to product



FPSC

AKAS®

Select: Switch operation

Optical safety device				Fully automatic adjustment after tool change	Manual adjustment
Optical safety device					
AKAS® II	M ¹	M ¹	F ¹	✓	LC ¹
AKAS® 3	M ¹	M ¹	F ¹	✓	
AKAS® 3P	M ¹	M ¹	F ¹	✓	
ULVT/BLVT safety light curtain	✓	✓			

1) version



AMS





HMI
text displays

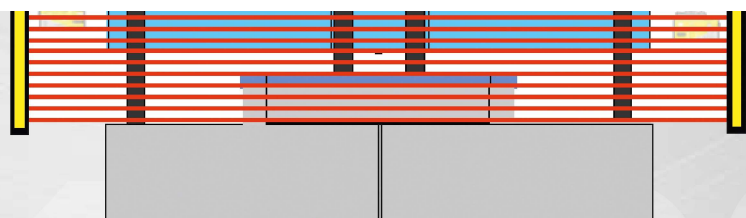
HMI text displays

broad product range of displays in text and touch screen versions for direct connection to FPSC and AKAS® systems.





News





An angular optical system diverts the laser beam by 90 degrees. This permits the housing to be mounted upright in a space-saving position. Safety and high productivity now also for small compact presses.

Time savings

- compared to manually adjustable systems during tool change



innovative solutions

Safety light curtains

Cat 4, SIL 3, PL e
Protective field height up to 2,500 mm
High range up to 60 m
Finger or hand protection
Very short response time as of 2 ms
Switching device integrated
Blanking and cascading

Safety foot mats

Type 3, SIL 2, PL d
individual sizes and shapes
Series connection of up to ten mats
Surface in plastic, aluminium or stainless steel
Capacity of up to 2,000 N
High safety through closed-circuit protection

Safety laser scanner

Cat 3, SIL 2, PL d
Simple assembly
Protective field 4 m, range 7 m
Warning field 15 m
Measuring field 50 m range
Several areas programmable

Safety foot-switch

single or double pedal

Control, measure, regulate

Measuring light curtains
Hole detection devices
Directional counting light barriers
Loop sensors
Encoding strips

